

WHAT IS CLAIMED IS:-

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1. An image display device for receiving an input image data comprising three or more color data, and displaying the input image data on an image display unit, comprising:
 - a color converter for converting a first image data comprising three or more color data, into a second image data comprising three or more color data, on the basis of conversion characteristics data;
 - a conversion characteristics storage for storing the conversion characteristics;
 - conversion characteristics designation means for designating the conversion characteristics to be used in the color converter, and outputting the conversion characteristics designation data; and
 - conversion characteristics setting means for calculating the conversion characteristics data on the basis of the conversion characteristics designation data, and setting the conversion characteristics data in the conversion characteristics storage;

wherein

said color converter comprises:

 - a calculation term generator for receiving the first image data, and outputting calculation terms which are effective just for the specific hues; and
 - a matrix calculator performing matrix calculation using the calculation terms effective just for the specific hues.
2. The image display device as set forth in claim 1, wherein said conversion characteristics designation comprises:
 - means for selecting the color for which the conversion characteristics is to be designated; and
 - means for designating the conversion characteristics

for the selected color.

3. The image display device as set forth in claim 2, wherein

obj said conversion characteristics data includes matrix calculation coefficients used in said matrix calculator; and said conversion characteristics setting means calculates the conversion characteristics data by adding or subtracting the value corresponding to the value of the conversion characteristics designation data to or from the coefficients among the coefficients for the calculation term effective for the selected color, among the calculation terms effective just for the specific hues.

4. The image display device according to claim 2, wherein said means for designating the conversion characteristics for the selected color comprises:

means for selecting one of the two adjacent colors toward which the hue of the selected color is to be shifted; and

means for selecting the degree by which the hue of the selected color is to be shifted toward the selected one of the adjacent colors.

5. The image display device as set forth in claim 4, wherein the colors for which the conversion characteristics can be designated include red, green and blue, said device comprising

means for selecting one of yellow and magenta as said one of the adjacent colors when the selected color is red, for selecting one cyan and yellow as said one of the adjacent colors when the selected color is green, and for selecting one of magenta and yellow as said one of the adjacent colors when the selected color is blue.

6. The image display device as set forth in claim 4, wherein the colors for which the conversion characteristics can be designated include red, yellow, green, cyan, blue, and magenta, said device comprising means for

selecting one of yellow and magenta as said one of the adjacent colors when the selected color is red,

selecting one of red and green as said one of the adjacent colors when the selected color is yellow,

selecting one cyan and yellow as said one of the adjacent colors when the selected color is green,

selecting one of green and blue as said one of the adjacent colors when the selected color is cyan

selecting one of magenta and yellow as said one of the adjacent colors when the selected color is blue, and

selecting one of blue and red as said one of the adjacent colors when the selected color is magenta.

7. The image display device as set forth in claim 4, wherein the colors for which the conversion characteristics can be designated include skin color, said device comprising

means for selecting one of red and yellow as said one of the adjacent colors when the selected color is skin color.

8. The image display device as set forth in claim 4, wherein said conversion characteristics designation data include

information indicating the color selected by said conversion characteristics designation means;

information indicating the one of the two adjacent colors to which the hue of the selected color is to be shifted; and

information indicating the amount by which the hue of

the selected color is to be shifted toward the selected one of said adjacent colors.

9. The image display device as set forth in claim 1, wherein said calculation term generator comprises:

color extracting means for extracting chromatic and achromatic components from the first image data; and

a polynomial calculator performing comparison operation on the chromatic components.

10. The image display device as set forth in claim 9, wherein said color extracting means comprises:

a minimum and maximum calculator for calculating a minimum value α and a maximum value β of said first image data; and

a hue data calculator for calculating hue data r, g, b, y, m and c based on said first image data, and said minimum and maximum values α and β outputted from said minimum and maximum calculator;

said polynomial calculator comprises:

means for generating first comparison-result data based on the hue data outputted from said hue data calculator; and

means for generating second comparison-result data based on said first comparison-result data;

said matrix calculator is responsive to said hue data, said first comparison-result data, and said second comparison-result data, and performs matrix calculation using at least said hue data, said first comparison-result data, and said second comparison-result data, in accordance with the conversion characteristics from said coefficient storage.

11. The image display device as set forth in claim 10, wherein

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said first image data include three color data of red, green and blue,

said minimum and maximum calculator determines the minimum and maximum of the three color data R, G and B;

said hue data calculator calculates the hue data r, g, b, y, m, c by subtraction in accordance with:

$$r = R - \alpha ,$$

$$g = G - \alpha ,$$

$$b = B - \alpha .$$

$$y = \beta - B ,$$

$$m = \beta - G , \text{ and}$$

$$c = \beta - R ;$$

said first comparison-result generator generates the first comparison-result data between the hue data r, g, b and y, m, c;

said second comparison-result generator comprises:

multipling means for multiplying predetermined coefficients with said first comparison-result data; and means for producing the second-comparison result data using the output of the multiplying means.